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REMARKS

Claims 6, 14 and 17 stand objected to because of certain informalities. Applicant has amended these claims to correct the deficiencies noted by the Examiner. Reconsideration and withdrawal of the objection is respectfully requested.

Claims 3, 5-7, 19, 22-23, 25 and 44 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant has amended these claims, as well as claim 2, to particularly point out and distinctly claim the subject matter applicant regards as the invention. The amendments are made to correct antecedent basis and not for patentability. Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 1, 3, 14, 23, 25-26, 40 and 43 stand rejected under 35 U.S.C. 102(b) as being anticipated by Varaprasad et al. (US 5724187). Claim 1 has been amended to include the limitation of claim 6. Since claim 6 was not rejected under 102(b) as being anticipated by Varaprasad, reconsideration and withdrawal of the rejection of claims 1, 3, 14, 23, 25-26, 40 and 43 is respectfully requested.

Claims 1, 14, 24, 40 and 43 stand rejected under 35 U.S.C. 102(a) as being anticipated by Ikai et al. (US 2001/0006092). Claim 1 has been amended to include the limitation of claim 6. Since claim 6 was not rejected under 102(a) as being anticipated by Ikai, reconsideration and withdrawal of the rejection of claims 1, 14, 24, 40 and 43 is respectfully requested.

Claim 2 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Varaprasad et al. and further in view of Taira (US 6294279). Claims 20-21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Varaprasad et al. and further in view of Kampuchea et al. (US 6156080). Claim 22 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Varaprasad et al. and further in view of Cheshire (US5206756). Claim 2 stands rejected under 35 U.S.C. 103(a) as being

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unpatentable over Ikai et al. and further in view of Taira. Claims 3, 23 and 25-26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ikai et al. and further in view of Varaprasad et al. Claims 20-21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ikai et al. and further in view of Kumeuchi et al. Claims 22 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Ikai et al. and further in view of Cheshire.

Applicant has amended claim 1 to overcome the rejections of claim 1, *supra*. Because each of these rejected claims depends either directly or indirectly from claim 1, Applicant respectfully requests reconsideration and withdrawal of the rejections.

Claims 1, 4, 10, 14, 19, 23-26 and 43 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Schmid et al. (US 6080503) in view of the collective teachings of Varaprasad et al., Ikai et al., and Allen et al. (US 5300206). Claim 1 has been amended to include the limitation of claim 6. Since claim 6 was not rejected under 103(a) as being anticipated by the cited references, reconsideration and withdrawal of the rejection of claims 1, 10, 14, 19, 23-26 and 43 is respectfully requested. Applicant has cancelled claim 4.

Claim 2 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Schmid et al. and the collective teachings of Varaprasad et al., Ikai et al., and Allen et al. as applied to claim 1 above, and further in view of Taira. Claims 3 and 40 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Schmid et al. and the collective teachings of Varaprasad et al., Ikai et al., and Allen et al. as applied to claim 1 above, and further in view of Inoue et al. (US 2002/0031698). Claim 5 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Schmid et al. and the collective teachings of Varaprasad et al., Ikai et al., and Allen et al. as applied to claim 4 above, and further in view of Grupp et al. (US 5742006).

Applicant has amended claim 1 to overcome the rejections of claim 1, *supra*. Because each of these rejected claims depends either directly or indirectly from claim 1, Applicant respectfully requests reconsideration and withdrawal of the rejections. Applicant has cancelled claim 4.

Claims 6-7 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Schmid et al., the collective teachings of Varaprasad et al., Ikai et al., and Allen et al., and Grupp et al. as applied to

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claim 5 above, and further in view of Quake et al. (US 2002/037499).

Quake discloses a microfluidic device having, *inter alia*, microvalves and peristaltic pumps. Quake discloses that loop channels in a microfluidic device have at least one channel support located in the loop channel at a point where an air channel intersects the loop channel. (Quake, ¶ 389). Quake further discloses that application of air pressure causes the air channel to function as a microvalve and restrict or close the fluid channel at points not having the supports. *Id.* Thus, the supports ensure that the channels are not closed when air pressure is applied to block the flow in the channels without the supports. *Id.*

Quake discloses that in a preferred multilayer device, a pattern of fluid channels is fabricated on one layer of a microchip and a pattern of air channels is fabricated on a second layer of the microchip. (Quake, ¶ 23). Fluid channels carry fluids that are typically referred to as treatment channels because they carry samples and reagents. *Id.* Air channels typically operate on another layer of the device and may intersect or communicate with fluid channels where adjacent layers of the device meet. *Id.* The air channels are typically used to control the flow of fluid in the fluid or treatment channels and may be called control channels or control lines. *Id.*

Quake discloses that the treatment and control channels interact with each other where they intersect to form a microvalve. (Quake, ¶ 25). When sufficient pressure is applied to an air channel, the elastomeric membrane between the control channel and the treatment channel is deformed where the channels intersect. *Id.* Sufficient pressure pinches, restricts or closes off the flow in the treatment channel, forming a closed microvalve. *Id.*

The Examiner cites Quake to show that it is known to provide supports in open channels formed in the surface of a first component in order to support a section of a second component that covers the open channel so that pressure does not cause the components to deform. (Office Action, ¶ 22).

A requirement for providing a *prima facie* case of obviousness is that the Examiner must provide a basis for combining or modifying the cited references. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990).

Evidence of a suggestion, teaching or motivation to combine references may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or from the nature

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of the problem to be solved. *Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996). The invention must be viewed not with the blueprint drawn by the inventor, but in the state of the art that existed at the time. *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 138, 227 USPQ 543, 547 (Fed. Cir. 1985).

In the case *In re Kotzab*, 217 F.3d 1365 (Fed. Cir. 2000), the Court states:

Most, if not all inventions arise from a combination of old elements . . . Thus, every element of a claimed invention may often be found in the prior art. However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant.

Id. at 1395.

The statute requires that, for a showing of obviousness, "the subject matter *as a whole* would have been obvious." 35 U.S.C. 103(a), emphasis added. As the Federal Circuit has stated, "Focusing on the obviousness of substitutions and differences instead of on the invention *as a whole* . . . was a legally improper way to simplify the difficult determination of obviousness." *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1383 (Fed. Cir. 1986), emphasis added.

Appellants respectfully assert that the Examiner has lost track of the "subject matter as a whole" and has impermissibly focused on the obviousness of substitutions and differences instead of focusing on the invention as a whole. Using impermissible hindsight analysis, the Examiner has sought to find in the cited references the limitations claimed by Appellants without regard either to what the cited references teach or what the Appellants' claimed invention is as a whole.

As the Federal Circuit has instructed in *Kotzab*, *supra*, most if not all inventions arise from a combination of old elements and therefore, every element of a claimed invention may often be found in the prior art. The Examiner has not presented evidence supporting the combination of Quake with the other cited references. Quake is not attempting to solve the same problem that is being addressed by Applicant – a method of assembling electrochemical cell components. Indeed, Quake has disclosed a valve device that includes using a channel support to "lock open" the valve. With the channel support of Quake, the fluidic channel is not blocked off when pressure is applied to the air channel intersecting the fluid channel. Such is simply not what is claimed by Applicant. Without

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the blueprint drawn by Applicant, there is no suggestion or motivation to combine Quake with the other references cited by the Examiner. In fact, Quake discloses and teaches the value of deforming the microfluidic channel and the entire disclosure focuses on microfluidic devices measuring in micrometer dimensions.

Applicant respectfully asserts that the Examiner has failed to provide a particular showing of the motivation, suggestion or teaching to justify combining the cited references. As the Federal Circuit has stated, "The motivation, suggestion or teaching may come explicitly from a statement in the prior art, the knowledge of one of ordinary skill in the art, or, in some cases the nature of the problem to be solved." *In re Kotzab*, 217 F.3d at 1370. For an implicit finding of the justification, the *Kotzab* Court further teaches, "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *Id.* The Federal Circuit further requires evidence to support the justification to combine references. In the case *In re Lee*, 277 F.3d 1338 (Fed. Cir. 2002), the Court stated, "When patentability turns on the question of obviousness, the search for and analysis of the prior art includes *evidence* relevant to the finding of whether there is a teaching, motivation or suggestion to select and combine the references relied on as evidence of obviousness. *Id.* at 1343, emphasis added.

Because the Quake does not teach or suggest the limitation claimed by Applicant and because there is no justification for combining Quake with the other cited references, Applicant respectfully asserts that the Examiner has failed to provide a *prima facie* case of obviousness. Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 1, which Applicant has amended to include the limitations of claims 6 and 7.

Claims 15-18 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Schmid et al. and the collective teachings of Varaprasad et al., Ikai et al., and Allen et al. as applied to claim 1 above, and further in view of Grupp et al. and the collective teachings of Mestetsky et al. (US 3803068) and Choi (US 6635138). Claims 20-21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Schmid et al. and the collective teachings of Varaprasad et al., Ikai et al., and Allen et al. as applied to claim 1 above, and further in view of Kumeuchi et al. Claim 22 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Schmid et al. and the collective

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teachings of Varaprasad et al., Ikai et al., and Allen et al. as applied to claim 1 above, and further in view of Cheshire. Applicant has amended claim 1 to overcome the rejections of claim 1, *supra*. Because each of these rejected claims depends either directly or indirectly from claim 1, Applicant respectfully requests reconsideration and withdrawal of the rejections.

Applicant respectfully asserts that all claims are now in condition for allowance and earnestly seeks the issuance of a Notice of Allowance. If the Examiner believes that a telephone conference will expedite the examination of this application, the Examiner is invited to contact the below signed attorney. In the event there are additional charges in connection with the filing of this Response, the Commissioner is hereby authorized to charge the Deposit Account No. 50-0714/LYNN/0152 of the firm of the below-signed attorney in the amount of any necessary fee.

Respectfully submitted,
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